Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

"You will see then that two of the three species are recognizable as marine forms, while the third, in my opinion now, is at least not to be referred to a known marine form. As a rule, the Algæ found in saline regions belong to species found in brackish waters on the coast. One might expect to find a large variety of Ulveæ and Conferveæ in Salt Lake, and it would be of interest to see how closely these inland forms approximate to the littoral forms of the eastern and western coasts."—*A. S. Packard, Jr.*

BOTANICAL NEWS—The *Botanical Gazette* for September prints an article by Prof. J. T. Rothrock on the staining and double staining of vegetable tissue.——*Grevillea* for September contains an account, by W. L. Lindsay, of experiments on the colorific properties of lichens.——In Trimen's *Journal of Botany* for September, Mr. S. LeM. Moore discusses in an interesting way the mimicry of seeds and fruits, and the functions of seminal appendages, pointing out the resemblance of certain seeds to insects, spiders and shells. He concludes that "the insect-mimicing fruit or seed may escape from its seminivorous enemies by being passed over as an insect; moreover, insectivorous ones seizing it and finding out their mistake would be almost certain to fling it some distance away, by which means the species would stand a better chance of dispersion."

ZOÖLOGY.[1]

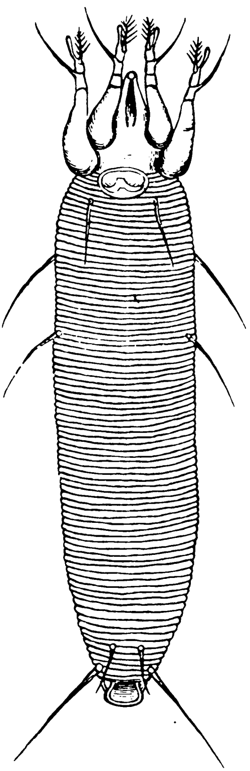
SUCCESSIVE APPEARANCE OF CHIROCEPHALUS AND STREPTOCEPHALUS IN THE SAME POND.—The pond at Woodbury, N. J., from which the types of a new species of the first-named genus were obtained, and which I called *C. holmanii*, has recently yielded specimens of a large species of Streptocephalus, which I have named *S. sealii*. Mr. W. P. Seal, who collected for me specimens of both species, tells me that Chirocephalus was very abundant, and Streptocephalus, though numerous, was not as plentiful. The consecutive appearance of these two species, the first in spring and the latter late in summer, in the same pond, seems to me worthy of record. The pond dries up during dry weather, and is not more than fifty feet in diameter. Mr. Seal, whose opinions I have learned to value very highly in reference to such matters, suggests that it is not improbable that wading and water birds carry the eggs of these branchipods and other water organisms, from place to place, in the mud or other material adhering to the feet and body.—*John A. Ryder.*

A THIRD LOCALITY FOR EURYPAUROPUS.—On the 20th of September last, I found specimens of the above-mentioned genus under sticks and leaves, in considerable abundance, at a place on the west side of the Schuylkill river, about a mile north of the most northern locality first discovered. Neither larvæ nor adults differed in any way from those found earlier in the year.—*John A. Ryder.*

---

[1] The departments of Ornithology and Mammalogy are conducted by Dr. ELLIOTT COUES, U. S. A.

A Probable New Species of Phytoptus or Gall-mite.—Prof. Wm. Barbeck recently handed me a slide containing specimens of a very small mite found by him on the leaves of a maple. Upon examining the slide carefully with a power of 550 diameters, I was enabled to make a pretty fair camera sketch, which I have compared with all of the figures of the other species to which I had access, and I am led to infer therefrom that it is a new species, but shall not name it on account of the fact that those hitherto known and described, have, for the most part, been very poorly characterized. The accompanying figure of this creature will give a good idea of its appearance. It measures not quite the $\frac{1}{150}$ of an inch in length, and is almost perfectly transparent. It is found in vast numbers on the leaves of the maple, under a forest of epidermal growths, crowded together and consisting of minute disks supported on pedicels. These growths have been considered fungoid in nature under the name of "*Erineum*," but are, in reality, hypertrophied hairs, and it is now well known that they are caused by very minute four-footed mites belonging to a very singular family known since the time of Dujardin as *Phytoptidæ*. When these creatures produce galls they are always open, the opening being on the under side or edge of the leaf, and are clothed inside with hairs, amongst which the mites browse heads downward.



Whilst there can be little doubt that Phytoptus is allied, as Murray observes, to the eight-legged itch-mites, the vermiform abdomen, which is almost wholly occupied with the reproductive function, according to Landois and Briosi, one cannot help being struck by its resemblance, in this regard, to the degraded crustacean Penella, parasitic upon the marine sun and parrot fishes, and which also has an elongated vermiform, annulate abdomen also wholly given up to reproductive purposes. It appears to me not improbable that we have, in these two cases, an instance of the *homoplasy* spoken of by E. Ray Lankester. That is, that creatures widely removed from each other in the system, may become similar in structure through the prolonged influence of similar conditioning causes.

The principal characters which seem to distinguish the form here figured from others, are the robust basal joints of the legs and the long tenant hairs of what are probably the first tarsal joints; though I am not sure that these are specific characters, and it will be impossible to decide until the group has been specially studied. Meanwhile, the figure of the above-described Phytoptus, observed by me, may be of use to some specialist interested in revising the group.—*John A. Ryder.*

THE ENGLISH SPARROW (*Passer domesticus*).—Every fact touching the relations of the English sparrow to our native birds should be put upon record, to the end that a just conclusion may be reached in regard to its character. During the present month (June, 1879) Hon. Wm. H. Upson, of Akron, called my attention to the fact that a box erected for birds in his yard had, in the spring, been occupied by the sparrows; that the house-martins had taken forcible possession, driven out the sparrows and were then occupying the box, which the sparrows were constantly endeavoring to regain. Going to his grounds I found one of the martins sitting as a sentinel at the door of the box, and in a few minutes the sparrow appeared with materials for nest-building in its bill, hanging around apparently waiting for an opportunity to enter the box; it never tried to enter while the martin was sitting in sight at the door, but as soon as the passage seemed clear, made the attempt; it was every time driven away by the martin. I watched the controversy for an hour, during which many attempts were made to gain possession. The sparrow never called for re-inforcements, but twice the martin gave a sharp call which brought several others to his assistance. It was very evident that the martin was able to hold the fort.

Mr. Upson has many trees and much thick shrubbery in his yard, and although his grounds are in the city of Akron, they are filled with a large variety of our native birds, and he reports that they are all fully able to take care of themselves in the presence of the sparrow, but suggests that in large numbers the sparrows may induce a bird famine, and in that way alone tend to diminish the number of our native birds.

Prof. Elizur Wright, of Mass., was the guest of Mr. Upson at the time of my visit, and was much interested in the controversy between the sparrow and the martin. He stated that in his grounds at Medford, near Boston, the sparrows from the city attempted to take possession of boxes erected for the blue birds and the white-breasted swallow, but were driven away from the boxes and off from the grounds by these native birds. He reported the following birds as frequenting his grounds and a clump of forest adjacent to them, blue bird, white-breasted swallow, scarlet tanager, wood thrush, summer yellow bird, red start, song sparrow, chipping sparrow, grass finch, cat bird, brown thrush, gold finch, indigo finch, house and wood phœbe, towhee bunting, Baltimore oriole, orchard oriole, white-eyed vireo, red-eyed vireo, fly catchers, king bird, cuckoo, etc. He also states that in his grounds the red squirrel is a great plunderer of the eggs of the birds.

July 8.—The sparrows in Mr. Upson's grounds have finally regained possession of their box. Mr. Upson informs me that they never made a direct attack upon the martins, but watched the box continuously for many weeks, and at every possible opportunity carried nest-building materials into it, until the patience of the martins was exhausted, their associates were called together in consultation, and the box abandoned.—*M. C. Read, Hudson, O.*

DESTRUCTIVENESS OF ENGLISH SPARROWS.—I am informed by Mr. John M. Shorten, of Cincinnati, Ohio, of a humming-bird brought to him to be mounted, which had been killed by English sparrows. A friend of Mr. Shorten witnessed the attempts of the pests to destroy the little hummer, but unfortunately did not succeed in rescuing it until life was nearly extinct.—*Elliott Coues, Washington.*

CURIOUS HABIT OF THE ENGLISH SPARROW.—I have recently noticed what seemed to me a curious habit of our English sparrow. On several occasions whilst walking through the city, I have seen them take potato bugs and other insects when on the wing, after the fashion of swallows.

I have also repeatedly noticed these sparrows climbing tree trunks in spirals exactly like a creeper, stopping at intervals to pick up insects and the nests of our common yellow caterpillar from the interstices of the bark. Sometimes the bird would flutter to the ground and reascend, sometimes go from the ground to the lower branches and then try another tree.—*J. R. Taylor, M.D.*

SWALLOWS FEEDING ON BAYBERRIES.—During a visit at Beach Haven, N. J., I noticed, September 10, 1878, great flocks of swallows, which I took to be *Cotyle riparia*.

I saw them alighting by millions on the bare sand flats, whole acres being covered at once; some coming, others going, and all as they sat, facing the wind.

The ground from which they had just flown was, of course, dotted with their freshly dropped excrement, and I was astonished to find therein the hard seeds of the bayberry (*Myrica cerifera*). I at first refused to believe the obvious inference, supposing it to be a settled fact in natural history that swallows were wholly insectivorous. But from further observation the conclusion seemed inevitable that they had fed upon the bayberries. I learned, moreover, that they had been seen to alight upon the bushes, which were afterwards found to be stripped; and the opinion was expressed by old residents of the place, that the swallows were attracted there by the berries. I was anxious to pursue the subject further but was obliged to leave next morning. Some of my friends, however, endeavored to procure me specimens for identification, but failed to find them. The birds were probably on the eve of migration, and arranging therefor. Perhaps their ordinary pabulum is too quickly digested to support them on their flight, and they therefore instinctively lay up a store of more durable food.—*James Altinson.*

NOTES ON THE SLAVE-MAKING ANT.—For the past three years I have been observing a large colony of slave-making ants (*Formica sanguinea*). The formicary is in the grove which surrounds the house, thus affording me an excellent opportunity to see the battles and raids upon other species, and to note their curious proceedings in many other respects.

On August 1st and 2d I witnessed the greatest battle I ever saw between the slave-makers (*F. sanguinea*) and the black ants (*F. fusca*). The distance between the two colonies was one hundred and twenty feet. The immense number of individuals composing the colony of slave-makers may be partly estimated by seeing them on the war path, which was about one foot in width and one hundred and twenty feet in length—not thinly scattered but a vast moving phalanx.

The battle-field was about twenty-five or thirty feet in circumference. The blacks were a grand army that would not flee, and the ground was soon literally covered with the combatants.

It is stated in the August number of the AMERICAN NATURALIST, page 526, that by means of the microphone Mr. T. S. Tait has been able to hear the roar of a black ant when attacked by its companion. When the ants were first attacked in this great battle, I certainly heard a roar without the aid of a microphone! Was it the busy tramping feet that I heard? The roar—I do not know what else to call it—lasted only a few moments, whereas the battle lasted four or five hours before the reds gained possession of the vast nurseries of the blacks. It took them nearly two days (they cease work at night) to transport the pupæ and the mature prisoners to their own dominions.

It is a singular fact, that in all the battles which I have witnessed during the past three years the reds have never been repulsed by the blacks, but have always come off victorious. I think the main reason why the blacks are so easily slaughtered is the fact that they never let go their hold on their adversary. A black ant will fasten its mandibles upon a leg of the red warrior, another red cuts the head off, and it is not uncommon to see as many as three black heads hanging to the legs of one of the reds, while the headless trunks of the blacks are strewn thickly over the ground. Very few reds are killed compared with the blacks.

The blacks are not the only species which the slave-makers attack. The brown ant (*F. schaufussii*), and the yellow variety

(*F. schaufussii* var. *americana*), both fall victims to their insatiate rapacity. Large numbers of these brown and yellow ants are reared in the slave-making colony, and they make excellent nurses for their masters. They also make raids upon two species of *Aphænogaster*, but these do not remain long with their captors. But I am happy to state that there are two species of ants in the grove which the red marauders dare not attack—*Camponotus meleus* and *Polyergus lucidus* they never attack, however small or weak the colony.—*Mary Treat.*

NOTES ON PACIFIC COAST MAMMALS.—The curious case of a breed of one-toed hogs, mentioned by Dr. Coues, is paralleled, at least in an individual instance, by that of a one-toed deer, the four feet of which were presented recently to the California Academy of Science. Unfortunately the only parts sent were the metatarsals and toes, so that it would be difficult to be certain of the species further than that it was a Cariacus. The deer was killed in Mendocino county, Cal., but no information as to the existence or non-existence of others resembling it has yet been obtained. In all cases the third toe was the only one utilized for progression, but the extent of the development of the fourth toe differed in the respective feet.

Mr. Chapman, a taxidermist of San Francisco, has a deer horn which is eighteen inches long, has an external basal prong five and a-half inches long and an internal posterior prong four and a-half inches long, branching off six and a-quarter inches from the slightly re-curved tip of the main antler.

In the collection of Mr. Lorquin, another taxidermist of San Francisco, there was, not long since, a very large pair of horns of *Cervus canadensis*, full grown yet with the velvet still perfect. The left horn measured four feet eleven inches along the curve, the right, about an inch less. The right had four branches near the base, and divided into four prongs at the crown; while the left had but three basal prongs and three coronal branches. The distance between the horns at their greatest outward curvature was three feet eight inches, and the tips were two feet six inches apart. Will some reader of the NATURALIST kindly inform me whether similar differences between the two horns of this species are the rule or the exception; and also whether the large palmated anterior basal prong of the male reindeer's horn usually occurs on one horn only or on both?

The lynx of Alaska, which I suppose is *Lynx canadensis*, appears to attain very large dimensions, since the largest among several large ones in the possession of Mr. Blunt measured four feet one inch from the tip of the nose to that of the tail. This gentleman had also an albino gopher of a dirty white tint. By the term "gopher" I do not mean the Spermophilus, which is often miscalled by that name, but the true gopher (*Thomomys bulbivorus*).—*W. N. Lockington.*

HABITS OF SPERMOPHILUS RICHARDSONI.—I have received the following interesting communication, which gives some new light upon the hibernation of this species.—*Elliot Coues, Washington, D. C.*

FORT ELLIS, MONTANA, Sept 8th, 1879.

Dr. Elliott Coues, U. S. Army, Washington, D. C.

SIR:—So little has been written in regard to the so-called "gopher" (*Spermophilus richardsoni*), at least that I have seen, that a few facts which have come under my own observation may be welcome to you.

I have always supposed that the gopher hibernated, but during the winter of 1878–79, while stationed at Fort Custer, Montana, I often saw them in December, January and February, playing about on the snow, which had been trodden down for a few feet around the entrance of the burrows. Small zig-zag paths led from hole to hole, showing that their sociability was continued during the winter. Some of the holes noticed had no foot-marks around them, being clean, circular openings in the snow, as if the gophers had burrowed up to the surface from below, and then found it too cold to come out. Those observed were seen when the day was bright and warm, usually about noon. When a new snow fell and covered the holes, the gophers remained inactive for some days, at least until the storm was over, and then came out to sun themselves. From some of the holes no gophers were seen during the winter, while from others they were noticed almost every pleasant day during that season. I have seen no young ones except in June and early in July; the smallest ever seen were noticed about the middle of last June, while I was walking a short distance from this post. I then saw them only a few yards off, a female with three young, gamboling in the sun, very much like young kittens. One was noticed running around after its own tail, as I have seen kittens doing. At my approach the old one disappeared in the burrow with the usual squeak and suggestive flirt of the tail; the young ones stopped their play and regarded me with much interest, yet manifested no disposition to escape. My setter dog, which had followed me, went up to them and took one in her mouth and brought it to me alive. I then, without any difficulty, picked up the others and held them in my hands for some little time. They manifested no fear at all, and seemed perfectly contented, even showing no desire to escape when placed on the ground again. I had to put them in the burrow before they would disappear. These were the first I had ever seen which showed no fear of man or dog. From their size, not longer than four or five inches, I judged them to be about a month old.

Regarding the distribution of the gopher, I may add that I have seen the animal in Wyoming, Utah, Colorado and Montana, from the Platte to the Marias river. Very Respectfully,

S. M. SWIGERT, *1st Lieut. 2d Cavalry.*

OVIPAROUS SNAKES.—In his article "On the question 'Do snakes swallow their young?'" (Proc. Am. Assoc. Adv. Sci. for 1873) Mr. Goode states that certain species of snakes, with which he includes *Heterodon platyrhinos* and *Tropidonotus sipedon*, are ovo-viviparous.

I have in my possession two eggs of *H. platyrhinos* from a set of twenty-two ploughed out of the sand at East Hampton, L. I., on the 10th of September, 1877.

The fact that these eggs had been buried and left in the sand, and that of the two in my possession one did not hatch till the fourth day after its discovery (the other being then put in alcohol to prevent its hatching) shows conclusively that this species is sometimes, at least, oviparous.

Can it be true of this species and of *T. sipedon*, which a communication from Prof. Cope states to be oviparous, that they are oviparous in some cases and ovo-viviparous in others, as is supposed are some of the Eutænias?—*F. W. Cragin.*

STRATAGEM OF A WASP.—One day when in Southern New Jersey, wearied with the heat, I was resting under a large oak, when my attention was drawn to what at first seemed a strangely variegated insect on the trunk of the tree; closer examination showed the apparently single insect to be really two insects, one a wasp the other a roach. My approach frightened the wasp off, but the roach did not move, at least very far. Wishing to understand why the wasp had been so near the roach, I quietly watched till the wasp returned. It had no sooner alighted, than going to the roach it seized it by the base of one of its antennæ and proceeded to back up the tree, dragging the roach after it. I soon perceived that the probable reason the roach did not escape when the wasp had been frightened off was, that it had been stung. It is well known that wasps frequently sting spiders and larvæ just sufficiently to paralyze them, so that they may not decay before the young, for whom they are destined, are in condition to feed upon them. But it seems in the instance above cited, as if the wasp had only so far injured the roach as to render it incapable of escape, but not incapable of walking. By which stratagem it was thus saved the labor of bodily carrying its victim to its nest. Where its nest was, and whether the roach was destined to be food for the young to be, I could not ascertain, for unwittingly I frightened the wasp off again, and it did not return while I remained by the spot.—*Henry Turner.*

BELEOSTOMA PISCIVOROUS.—In the spring of 1878, at Ithaca, N. Y., I had confined, in a jar of water with stickle-backs (Gasterosteus) and other fishes, a large specimen of a water-bug (Beleostoma). At different times I found dead fishes in the jar, and surmised, from the appearance of a wound on each of them, that the water-bug had been the cause of their death. This supposition was afterwards corroborated by seeing a fish vainly struggling to free itself from the Beleostoma that had pierced it with its beak and was, to all appearance, pumping out its blood. This particular specimen of Beleostoma was in great need of nourishment, for it provided for over a hundred plump little red mites that were attached to different portions of its body.—*Henry Turner.*

NORTHERN RANGE OF CERMATIA FORCEPS.—Mr. Samuel Henshaw writes us that of this Myriopod the museum of the Boston Society of Natural History contains six specimens taken in Massachusetts, and that he knows of three others found in the same State. Mr. F. G. Sanborn tells him that it has been taken in Milford, N. H. Mr. J. H. Emerton states that it has also occurred in Essex County, Mass.

THE BRAIN OF INSECTS.—An interesting paper, by E. T. Newton, on this subject appears in the *Quarterly Journal of Microscopical Science* for July. The author refers to the complicated internal structure of the brain of insects as first pointed out by Dujardin. Faive has shown that the power of coördinating the movements of the body is lodged in the infra-œsophageal ganglia ; this being the case, Newton thinks that both the upper and lower pairs of ganglia ought to be regarded as forming parts of the insect's brain. Brandt, in a paper read September 1st before the French Academy, states, *inter alia*, that it is untrue that all insects have a subœsophageal ganglion separate from the others (*Rhizotrogus*, *Stylops* and *Hydrometra* have not). The circumvolutions of the brain are found in *all* insects, in various developments, and the development differs in individuals of the same species. In general, the development of the hemispheres, but not of the whole brain, is related to instincts and habits. In some insects having two thoracic ganglia, the first is simple, the second compound, in others both are compound. The transformation of the nervous system takes place in some insects by reduction of the number of ganglia, in others by an opposite process.

AGENCY OF INFUSORIA IN FERTILIZING SEA-WEEDS.—It appears from the studies of Prof. Dodel-Port, the eminent Zurich botanist, says *Nature*, that certain infusoria harbored by the red sea-weeds, return the favor by fertilizing the sea-weeds on which they live. Thus the currents formed in the water by the bell-shaped animalcules (Vorticella) situated on the shrub-like branches of a Polysiphonia, bear the otherwise immovable spores (antherozoids) of this Alga to the female plants, which are thus fertilized, just as pollen-collecting insects fertilize willow blossoms or other flowers; and as many insects feed on pollen, so the animalcules or infusorians feed on the spores of the sea-weeds.

MIMICRY IN A SNAKE.—In 1879, while out with the Hayden Survey, I was detained about a week, by high water, on the south bank of the San Juan river, near the line between New Mexico and Colorado. While out one day with my guide, we came across a very large bull-snake (*Pityophis* sp.?). The reptile was suspended on some small dead oak trees about two feet from the ground. These little trees were about as thick through as the snake, and the bark was ringed and spotted much as he appeared. We went close to the snake, but he did not stir, remaining apparently stiff and rigid like the sticks upon which he lay. We viewed him for some moments, commenting upon his singular position and appearance, when "Frank" finally shot his head off. As this snake closely resembled, in size and color, the little slender oaks which abound in that region, and which are often found bent to the ground, dead, it occured to me that he was practicing deception, either to enable him to capture a bird or other prey, or to conceal himself from his enemies.—*Chas. Aldrich, Webster city, Iowa.*

VIBRATIONS OF THE TAIL IN SNAKES.—I had occasionally seen this manifestation in some of our common, harmless snakes, in years past, but my attention was specially directed to it last year, while making collections for the National Museum and the Zoölogical Garden, Philadelphia. Among my captures were some large specimens of a species of wolf-snake (*Coluber obsoletus confinis*). Whenever these reptiles were disturbed or annoyed, they would vibrate their tails precisely like our rattlesnakes, and with a very similar sound, snapping at any movable object within reach. They had a general resemblance in color to our rattlesnakes, and if met unawares in the dry grass, one might well believe on the instant that he had encountered a genuine massasauga!—*Chas. Aldrich, Webster city, Iowa.*

THE HABITS OF THE ORANG.—In an interesting paper on the orang, read by Mr. W. F. Hornaday at the Saratoga meeting of the American Association for the Advancement of Science, he records the following facts and impressions from personal observations in Borneo:

"Each individual of the Bornean orangs differs from his fellows, and has as many facial peculiarities belonging to himself alone as can be found in the individuals of any unmixed race of human beings. According to my experience," Mr. Hornaday said, "orangs differ from each other fully as much as either Chinese or Japanese, if not more. The faces of the more intelligent orangs are capable of a great variety of expression, and in some the exhibition of the various passions which are popularly supposed to belong to human beings alone, is truly remarkable. I had in my possession, in Borneo, four young living orangs. Three were dull and intractable, but the fourth was a perpetual wonder both to Europeans and the natives themselves. For weeks it lived in the same room with me so that I watched it almost constantly. The expression of its face was highly intelligent, while the intellectual development of its forehead and entire cranium would have been quite alarming to any enemy of the theory of evolution. This specimen was a fine healthy male infant about seven or eight months old, twenty-two and a-quarter inches in height, thirty-seven inches in extent of arms and fifteen and a-half pounds in weight. He exhibited fully as much intelligence as any child under two years of age, with all the emotions of affection, dislike, anger, fear, cunning, playfulness and even ennui. When teased beyond endurance he would first whine fitfully, but if the teasing were continued, he would throw himself upon the floor, kicking and screaming and catching his breath as loudly and naturally as a big spoiled child. He was afraid of strangers as a rule, but decidedly attached to my Chinese servant and myself. When alarmed by a large dog or other animal, he would shuffle up to me and climb with all haste into my arms. When a cat came near him he would grab it by the tail with the very same action and bright, mischievous expression of face that we have all seen in human children.

" Last year while on a collecting expedition for Prof. H. A. Ward, I had ample opportunities to study the habits of the orang outang in its native forests. I visited Borneo in August, 1878, for the sole purpose of obtaining specimens of the Bornean Simia and to study the different species. I visited the territory of Sarawak and for two and a-half months devoted my entire time to hunting the orang along the River Sadong and its tributary, the Simujan. This whole region is one vast swamp, covered everywhere with a dense growth of lofty virgin forest. During the fruit season, from the middle of January to May 1, the food of the orang is the durlon, mangosteen and rambuton. During the hot months of May, June and July they retire far into the depths of the forest, and are exceedingly difficult to find. But during the season of the heaviest rains, from August to November, when the forests are flooded, the orangs are found in the vicinity of the rivers. I soon found that the only way to reach them would be to paddle up and down the rivers and watch for them in the tree tops. Near the source of the Simujan river, and far beyond the last Dyak village, we found great numbers of old orang nests and some which were quite new. The nest consists of a quantity of leafy branches broken off and piled loosely into the fork of a tree. The orang usually selects a sapling and builds his nest in its top, even though his weight causes it to sway alarmingly. He often builds his nest within twenty-five feet of the ground and seldom higher than forty feet. Sometimes it is fully three feet in diameter, but usually not more than two, and quite flat on the top. There is no weaving together of branches. In short the orang builds a nest precisely as a man would build one for himself were he obliged to pass a night in a tree top and had nothing to cut branches with. I have seen one or two such nests of men in the forest, where the builder had only his bare hands to work with, and they were just as rudely constructed, of just such materials, and in about the same position as the average orang nest. Upon this leafy platform the orang lies prone upon his back, with his long arms and short thick legs thrust outward and upward, firmly grasping, while he sleeps, the nearest large branches within his reach. On several occasions I surprised these animals upon their nests, and once I had an opportunity to watch an orang while it constructed its resting place. He never uses a nest after the leaves become withered and dry, no doubt because the bare branches are not comfortable to lie upon. I never saw or heard of any house-building by orang outangs.

"We found the animals most numerous along the Simujan river, near its source. Our manner of hunting was to make trips up and down the river in our boat, paddling slowly and silently along, keeping a careful lookout. Sometimes in rounding a bend in the river we would come full upon a huge, black-faced, red-haired animal reposing quietly or feeding. I aimed to shoot them through the chest, and thus either kill them at once or disable them so that they would be unable to get away. On several occasions I succeeded in killing a large specimen with a single bullet. It would at all times have been an easy matter to have shot them through the head, but this would have ruined the skulls. As soon as an orang was fired at, if not killed at once, he would begin climbing away with all haste.

"I think we may fairly consider the orangs the most helpless of all quadrumana. Owing to the great weight of their bodies and the peculiar structure of their hands they cannot run nimbly along even the largest branches, and never dare to spring from one tree to the next. The weight of the adult male ranges from 120 to 160 pounds. Owing to the disproportionate shortness of his legs, his progress depends mainly upon his long, sinewy arms, and very often he goes swinging through a tree top by their aid alone. Upon the ground orangs are a picture of the most abject helplessness, and in their native forest they are very seldom known to descend to the earth. They are utterly incapable of standing fully erect without touching the ground with their hands, and for them to be represented in drawings and museums as standing erect, is contrary to nature."

In conclusion, Mr. Hornaday remarked: "We will not say anything about the part of orangs in the long chain of evolution, for we feel that no one present will wish to admit his or her relationship. But while abstract argument leads hither and thither, according as this or that writer is most ably gifted for argument, there is still one influence to which every true naturalist is amenable, and which no one will ignore who has studied from nature any group of natural forms. Let such an one (if indeed such an one exists to-day), who is prejudiced against Darwinian views, go to the forests of Borneo. Let him there watch from day to day this strangely human form in all its various phases of existence. Let him see it climb, walk, build its nest, eat and drink, and fight like human 'roughs.' Let him see the female suckle her young and carry it astride her hip precisely as do the Coolie women of Hindoostan. Let him witness their human-like emotions of affection, satisfaction, pain and childish rage—let him see all this and then he may feel how much more patent has been this lesson than all he has read in pages of abstract ratiocination."

ZOÖLOGICAL NEWS.—In his presidential address before the British Association, Prof. Allman takes the ground that the deep-sea *Bathybius* may be an organism, as he thinks it not easy to believe that the very elaborate investigations of Huxley and Haeckel can be easily set aside. Huxley, at the close of the address, stated that his mind, at present, was in a state of suspense about it, though within a short time he had disowned it. Haeckel, himself, has, in recent papers, urged its recognition as an organism, while we may add that Dr. Bessels, in a letter to us, thinks that under the circumstances it is best to wait for more light as to the organic nature of the Protobathybius which he examined in the high Arctic regions.——The pamphlet of Prof. Moebius has made a strong impression on some minds previously in doubt, that Eozoön is of mineral rather than organic origin.——In the Proceedings of the Natural Science Association of Christiania, Norway, Prof. G. O. Sars gives excellent drawings of three whales, *Balænoptera rostrata*, *B. musculus* and *B. sibbaldii*. One can form some idea how these whales look from such admirable and evidently life-like sketches.——The Zoölogy of the Fiords near Bergen, Norway, by the Rev. A. M. Norman. (*Journal of Conchology*, II, 1879. Extracted, pp. 77.) This paper contains a list of 261 species of Mollusca collected at Bergen, Norway, by the author, and a supplemental list of ninety-two more which have been quoted from that region. No new species are described, but the notes on the synonymy of the species and their geographical distribution make the article both valuable and interesting.

ANTHROPOLOGY.[1]

PREHISTORIC IMPLEMENTS OF THE RIVERS COYOTE AND GUADALOUPE, SANTA CLARA COUNTY, CAL.—Some three years ago my interest was awakened concerning prehistoric implements by finding what were, without doubt, stone and flint celts, though of rude workmanship.

Before this time there had been found in various places throughout the valley, while plowing fields and digging away river banks in bridge building, mortars in different stages of preservation.

---

[1] Edited by Prof. OTIS T. MASON, Columbian College, Washington, D. C.